

5 TITLE: PIPE COUPLING FOR JOINING PIPES OF VARYING  
DIAMETERS

10 BACKGROUND OF THE INVENTION

It is common to attach the inner end of a wall hydrant to a plastic pipe connected to a source of pressurized water. However, the typical wall hydrant may be mass produced to be attached to a plastic pipe, for example, having an outside  
15 diameter of  $\frac{3}{4}$ ", when, in a given situation, the pressurized inlet water line is a plastic pipe having an outside diameter of only  $\frac{1}{2}$ ". It is difficult and time consuming to introduce reduction couplers or the like to permit the  $\frac{1}{2}$ " O.D. plastic pipe to be joined to a  $\frac{3}{4}$ " ID coupling on the inner end of the  
20 hydrant.

Therefore, it is a principal object of this invention to provide a pipe coupling for joining pipes of varying diameters.

A further object of this invention is to provide a pipe  
25 coupling for joining pipes of varying diameters which is economical of manufacture, and which can be easily and quickly used to join such pipes.

These and other objectives will be apparent to those skilled in the art.

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SUMMARY OF THE INVENTION

A pipe coupling for joining a first pipe to pipes of varying diameters includes first and second hollow fittings which are secured together in end-to-end relationship by a  
35 crimping process to rigidly hold the fitting members together to form a continuous fluid passageway. The first fitting member is comprised of metal, and a second fitting member is comprised of plastic material. The second fitting member has a pair of well openings with the outer well adjacent one end

5     thereof being of a greater diameter than the inner well. The  
outer well is adapted to receive the end of a hollow plastic  
pipe of greater diameter, e.g.,  $\frac{3}{4}$ ". The second well is  
available alternatively to receive the end of a plastic pipe  
of reduced diameter, e.g.,  $\frac{1}{2}$ ".

10     This coupling is ideal, for example, to secure PVC pipe  
to the inner end of a wall hydrant having a metal tube with  
an inlet end for connection to the coupling.

#### BRIEF DESCRIPTION OF THE DRAWINGS

15     Fig. 1 is a perspective view of the pipe coupling of  
this invention;

Fig. 2 is an exploded perspective view of the components  
of the pipe coupling of Fig. 1;

20     Fig. 3 is a longitudinal sectional view taken on line 3-  
3 of Fig. 1;

Fig. 4 is a perspective view of the coupling of this  
invention secured to the inner end of a wall hydrant;

25     Fig. 5 is a partial sectional view taken on line 5-5 of  
Fig. 4 with a large diameter plastic pipe secured within the  
inner end of the coupling; and

Fig. 6 is a partial sectional view similar to that of  
Fig. 5 with a small diameter plastic pipe secured within the  
inner end of the coupling.

#### 30 DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to Figs. 1 and 2, the pipe coupling 10 is  
comprised of a first hollow fitting 12 having a first end 14  
and a second end 16. A second hollow fitting 18 has a first  
end 20 and a second end 22. When the two hollow fittings 12  
35 and 18 are coupled together in end to end relationship (Fig.  
3), a continuous fluid passageway 24 is created by virtue of

5 the hollow interior 26 of fitting 12 and the hollow interior 28 of fitting 18.

The larger well 30 in fitting 18 has a typical diameter of  $\frac{3}{4}$ " and has a cylindrical interior wall surface 32 (Fig. 3). The second well 34 is immediately adjacent the well 30 and has a cylindrical wall surface 36. The second well has a typical diameter of  $\frac{1}{2}$ ".

The first hollow fitting 12 has a threaded nipple portion 38 formed at end 14. An enlarged diameter sleeve 40 is formed in fitting 12 at its inner end 16. An internal annular detent 42 is formed adjacent end 16 and fits into the annular groove 44 formed on the reduced diameter wall portion 46 of fitting 18 (Figs. 3, 5 and 6). A conventional O-ring seal 48 is located within notch 50 formed between shoulder 52 of fitting 12 and shoulder 54 of fitting 18 when the two fittings are placed together in overlapping condition as shown in Figs. 3, 5 and 6. A conventional sealant 56 (Fig. 3) can be inserted around detent 42 and within groove 44. The detent 42 is typically crimped inwardly to assume its position within annular groove 44.

25 With reference to Fig. 4, a typical wall hydrant 58 has a fluid outlet 60 and an elongated fluid inlet tube 62 having an inner end 64 terminating in an internally threaded flange 66 (see Fig. 5). Typically, the tube 62 and flange 66, along with fitting 12 are comprised of metal such as copper or the like. The fitting 18 is slidably inserted into the large diameter sleeve 40 after sealant 56 has been placed in the area of annular groove 44 (Fig. 3). The O-ring 48 will have been placed around and in front of the shoulder 54 of fitting 18 before the sliding action takes place. When the two fittings 12 and 18 are in their overlapping position shown in Fig. 3, the end 16 of the fitting 12 is crimped inwardly so that the detent 42 is pushed into the annular groove 44, as

5 described above and as shown in Fig. 3. This effectively  
locks the two fittings 12 and 18 together in longitudinal  
alignment, thus creating the elongated fluid passageway 24.  
The assembled coupling can then be threadably inserted into  
the sleeve 66 of hydrant 58 as best shown in Fig. 5. If a  
10 larger inlet pipe for the installation of the wall hydrant 58  
is required, such as a  $\frac{3}{4}$ " O.D. pipe, the end of such a pipe  
68 is inserted into the well 30 with a quantity of adhesive  
on its outer surface so as to be adhesively secured within  
the well 30 (Fig. 6). If the installation of hydrant 58  
15 requires a smaller inlet pipe carrying pressurized water to  
be used, a smaller pipe 70 is inserted into well 34 in the  
same manner as shown in Fig. 6. Again, the fitting 18 and  
the pipes 68 and 70 are typically of PVC plastic material.

It is therefore seen that the pipe coupling of this  
20 invention is well adapted to be utilized with inlet pipes of  
varying diameters. While the coupling is especially adapted  
to accommodate PVC pipes, it could be of other materials or  
it could utilize threaded connections between the end of such  
pipes and the interiors of the wells 32 and 34. It is thus  
25 seen that this invention will achieve at least all of its  
stated objectives.